

MEMORANDUM

TO: Mayor and City Council

FROM: Margaret Medellin, Utilities Portfolio Manager

THRU: Scott Miller, Director of Public Works;
Tyler Christoff, Deputy Public Works Director;
Dave Hornbacher, Director of Utilities;

DATE OF MEMO: March 22, 2019

MEETING DATE: March 26, 2019

RE: Status of Aspen's Integrated Water Supply System

REQUEST OF COUNCIL: During today's work session, staff will provide Council a status update on the City's Integrated Water Supply System (IWSS), which includes its watersheds, distribution network, operational and management strategies and projects designed to increase the reliability of this system. Staff also seeks Council feedback on the Stage II Water Shortage Ordinance currently in effect and refinement of the next steps to repeal or reaffirm this ordinance.

BACKGROUND: The City Utilities Department is responsible for assuring Aspen has a safe, legal and reliable water supply, now and into the future. To this end, the City has developed an Integrated Water Supply System (IWSS) which coordinates a portfolio of water supply options, management techniques and operational strategies. Many variables are included in managing this portfolio, including changing climate conditions, water demand patterns and system efficiency.

DISCUSSION: Important areas of the IWSS will be discussed at this work session.

2019 State of Aspen's Watersheds

Last year at this time, Aspen (along with large areas in the West) was experiencing a critically dry year, with snowpack peaking at 13.6" of Snow Water Equivalents (SWE) at the Independence Pass SNOTEL site. During the current water year, snow has accumulated close to median values. March, however, has been a pivotal month bringing abrupt increases in snowpack to our region, as well as the rest of the state (see attachment A: Colorado SNOTEL Map March 21, 2019). Snowpack in the Roaring Fork Watershed measured 155% on March 20, 2019 (see attachment B: Roaring Fork Conservancy Snowpack and River Report).

As a result of this above median snowpack coupled with certain weather and climate conditions, Aspen experienced avalanches in both Maroon and Castle Creek watersheds. These avalanches threatened Aspen's ability to provide a water supply to its customers. Utility staff were mobilized

to clear and maintain headgates. Utility staff also closely monitored conditions and adjusted the draw of supply from each creek as conditions changed throughout the avalanche events.

Drought Conditions

Much of the State of Colorado remains activated for drought, including Pitkin County. The State Drought Task Force will convene on April 1, 2019 to provide recommendations to the Governor on the 2019 drought response. Generally, the State is conservative in removing a drought declaration, although with recent drastically improved conditions, they are taking a ‘cautiously optimistic’ position.

Aspen remains in a Stage II Water Shortage, which imposes mandatory water use restrictions on Aspen’s customers. When appropriate, Council must pass a Resolution to remove these water shortage conditions.

The City activated its Drought Task Force, which includes cross-departmental staff that meet regularly to discuss drought conditions and the City’s response. The Task Force determined the following key dates for Council to consider in its drought response this year:

Target Date	Meeting
4-1-2019	CO State Drought Task Force meeting to discuss Drought Declaration status
4-3-2019	Aspen Drought Task Force meeting to discuss drought response recommendations for Council
4-22-2019	Council to discuss drought and potential Resolution for Water Shortage Stage change
10-2019	Aspen Drought Task Force to provide revised Title 25 Draft Language based on Lessons Learned from 2018 Drought Response

Watershed Monitoring Efforts

Recent studies identified the present level of watershed data as a significant vulnerability in Aspen’s IWSS. In response, staff has implemented additional monitoring in Aspen’s watersheds. These efforts include:

- USGS stream gage stations installed on Maroon Creek;
- USGS stream gage station installed on Roaring Fork River in collaboration with the Aspen Consolidated Sanitation District;
- USGS stream gage stations being planned for 2019 on Castle Creek in collaboration with Pitkin County;
- Procurement of soil moisture and climate monitoring station for the Castle Creek watershed in collaboration with the Aspen Global Change Institute;
- Collaboration with the National Center for Atmospheric Research on changing climate conditions in high elevation watersheds;
- Collaboration with the National Snow and Ice Data Center on LiDAR use for determining water content of snow supply.

Alternative Transfer Methods

Alternative Transfer Methods (ATMs) are a relatively new concept in Colorado that allow for temporary transfers of water that fit within the parameters of Colorado Water Law and do not injure water rights' holders. The State believes ATMs can be beneficial to municipal water supplies, rural communities and the environment. The City, Western Resource Advocates and Wilderness Workshop have been exploring the potential of implementing ATMs in the Upper Roaring Fork Basin to benefit Aspen's water supplies and local ecosystems. Jointly, this group held a workshop in Aspen on October 30, 2018 to learn from experts in this area. Subsequently, the same group solicited for a consultant to develop a Scope of Work for submission to the Colorado Water Conservation Board (CWCB) for a grant to pursue an ATM project. The consultant team, led by Western Water Partnerships, successfully bid on this project. Work has begun, and a grant request is anticipated to be submitted to the CWCB at its July 2019 Board meeting.

Aspen Water Meter Replacement Grant

On March 11, 2019 Council approved a contract for the implementation of Advanced Metering Infrastructure (AMI) for both the City's Water and Electric Utilities. This advanced technology will provide many benefits to the City and its customers, including improved management of water supply and use. Some customers will require new meters to comply with the new AMI technology. Staff have applied for a federal grant with the U.S. Bureau of Reclamation for assistance with expenses related to these meters. At its April 8, 2019 meeting, Council will be presented with a Resolution supporting this grant application.

Castle and Maroon Creek Conditional Water Storage Rights

Today, the City's primary source of stored water is snowpack, which varies significantly from year to year. Aspen uses direct flow rights from Maroon and Castle Creeks, which are diverted to the Leonard Thomas Reservoir located at Aspen's Water Treatment Facility, treated, and then delivered to Aspen customers. The Leonard Thomas Reservoir is an operational reservoir with a capacity of 9 acre-feet, which is less than a day of storage during peak summer use. Storage reservoirs, however, can retain water from season to season and year to year, and can provide water supplies even during times of shortage. The City's lack of storage presents significant vulnerabilities during events such as fire or avalanches as there is no buffer or back-up system when these two headgates are threatened. In addition, climate change has resulted in altered hydrology that introduce further vulnerabilities into our water supply now and into the future.

In recognition of these vulnerabilities, the City has maintained two conditional water storage rights on Castle and Maroon Creeks. Applications for findings of reasonable diligence were timely filed in the Division 5 Water Court for the Maroon Creek Reservoir (Case No. 16CW3128) and Castle Creek Reservoir (16CW3129). Statements of opposition were filed to both applications. The City and opposers reached agreement on these cases and are currently seeking a decree of due diligence from the Colorado Water Court. The Judge in this case requested additional information. Aspen has prepared this information and it is being reviewed by the opposers. We anticipate submitting this to the Court by April 19, 2019. Our next conference with the Court is April 25, 2019.

FINANCIAL/BUDGET IMPACTS: Work included in this status update is within the current 2019 budget authority.

ENVIRONMENTAL IMPACTS: The City is committed to reducing its footprint (carbon and water) and fighting climate change, but even with this effort and action the City recognizes that it is best practice to plan for a future that looks very different than today. The City's efforts to monitor, manage and improve its Integrated Water Supply System is necessary to ensure the City's resiliency.

RECOMMENDED ACTION: This presentation is intended to be informational and no formal action is requested of Council.

CITY MANAGER COMMENTS: _____

ATTACHMENTS:

A: Colorado SNOTEL Map March 21, 2019
B: Roaring Fork Conservancy Snowpack and River Report